In the Claims

1. (Previously Presented) A welding stud comprising:

a body having a first end and a second end, the first end having an outer diameter that is greater than an outer diameter of the second end;

the first end constructed to engage a stud welding gun; and

the second end having at least one recess formed therein.

2. (Original) The welding stud of claim 1 wherein the recess is designed to decrease an effective arc area of the second end to a workpiece.

3. (Original) The welding stud of claim 1 further comprising one of a powdered metal encapsulated and a combination of flux and powdered metal encapsulated in the second end.

4. (Original) The welding stud of claim 1 further comprising a plurality of recesses, wherein the recesses are concentric about an axis of the stud.

5. (Original) The welding stud of claim 1 further comprising a plurality of recesses, wherein the recesses are annular grooves.

6. (Original) The welding stud of claim 1 further comprising a nipple extending from the second end at a center axis of the stud for initiating contact with a workpiece and defining a gap between the workpiece and the second end.

7. (Original) The welding stud of claim 1 wherein the first end has a flange extending outwardly to engage the stud welding gun.

8. (Original) The welding stud of claim 1 further comprising a plurality of recesses, wherein the recesses are geometrically centered about the second end.

9. (Original) The welding stud of claim 1 further comprising a plurality of recesses, wherein the plurality of recesses are defined by a plurality of protrusions extending away from the welding stud and toward a workpiece.

10. (Previously Presented) A welding stud comprising:

a connector end constructed to engage a stud welding gun;

a solid cored body extending from the connector end;

a weld end constructed to be welded to a workpiece; and

wherein the weld end has at least one protrusion extending outwardly to space a majority of the weld end from a workpiece, wherein the majority of the weld end has a non-planar surface.

11. (Original) The welding stud of claim 10 further comprising a plurality of grooves and ridges formed in the weld end to form the non-planar surface.

12. (Original) The welding stud of claim 10 further comprising one of a combination of flux and powdered metal capsule and a powdered metal capsule within the weld end.

13. (Original) The welding stud of claim 11 wherein the plurality of ridges are geometrically centered about a longitudinal axis of the welding stud.

14. (Original) The welding stud of claim 11 wherein the plurality of ridges are annular.

15. (Original) The welding stud of claim 14 wherein the plurality of ridges are concentric.

16. (Currently Amended) The welding stud of claim 10 wherein the at least one protrusion includes a nipple extending from a center of the weld end beyond an outward-most tip of the non-planar surface.

17. (Currently Amended) The welding stud of claim 11 wherein each ridge has a base and a height and the height of each ridge is substantially similar to a width of the base of each ridge.

18. (Previously Presented) A method of manufacturing a welding stud comprising the steps of:

providing a welding stud having a first end and a second end;

forming the first end to engage a stud welder; and

forming the second end to non-interferingly engage a workpiece and with increased resistance to current flow as compared to a welding stud having a nipple and a generally planar surface thereabout.

19. (Original) The method of claim 18 further comprising the step of forming one of a flux and powdered metal combination pocket and a granular metal pocket in the welding stud.

20. (Original) The method of claim 18 wherein the step of forming the second end further comprises stamping a plurality of grooves therein.

21. (Original) The method of claim 18 wherein the step of forming the second end further comprises etching a plurality of grooves therein.

22. (Original) The method of claim 18 wherein the step of forming the second end further comprises machining a plurality of grooves therein.

23. (Original) The method of claim 18 wherein the step of forming the first end further comprises the step of forming the first end to engage a connector.

24. (Original) The method of claim 18 wherein the step of forming the second end increases the density of a current passed therethrough during a welding process.

25. (Previously Presented) A welding stud comprising:

a first end constructed to engage a stud welding gun;

a body extending from the first end to a face of a weld end;

means for localizing current density generally uniformly about a majority of an area circumscribed by a perimeter of the face of the weld end of the welding stud.

26. (Original) The welding stud of claim 25 wherein the means for localizing current density comprises a plurality of peaks formed in the face of the weld end about a nipple.

27. (Original) The welding stud of claim 25 wherein the means for connecting the welding stud is further constructed to engage a connector.

28. (Previously Presented) A welding stud comprising:

a body having a first end and a second end;

the first end constructed to engage a stud welding gun; and

the second end having a nipple and constructed thereabout with at least a portion having decreased arc surface area; the body constructed to communicate weld power from the first end to the second end along a majority of the area defined by a perimeter of a cross-section of the body.

29. (Previously Presented) A welding stud comprising:

a body having a first end and a second end, a head portion formed proximate the first end, and a shank portion extending between the head portion and the second end;

the shank portion having a generally uniform diameter along the length thereof;

the first end constructed to engage a stud welding gun; and

the second end having a surface constructed with at least one protrusion arranged to face a workpiece and a remaining surface that is configured with a contact area that is decreased compared to a planar surface.